

ABSTRACT

White light emitting LED luminaire incorporates an array of red, green and blue emitting LEDs and a feedback arrangement to maintain a desired color balance. The feedback arrangement includes photodiodes positioned and enabled to separately measure the light output of each RGB color component. In one embodiment, a single photodiode or array of photodiodes is positioned to intercept reflected light from a partially reflecting element placed in the path of the combined output of the LED array. Individual colors are measured sequentially by pulsing the LEDs and photodiodes or by the use of color filters. In an alternate embodiment, each LED has an associated photodiode, either incorporated into the LED package or in a separate package.